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(54) Title: EXCHANGE OF AGRICULTURAL INFORMATION AND PRODUCTS USING A GLOBAL COMPUTER NETWORK

(57) Abstract:

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EXCHANGE OF AGRICULTURAL INFORMATION AND PRODUCTS USING A GLOBAL COMPUTER NETWORK

TECHNICAL FIELD

The present invention relates to the agricultural industry and, more particularly, to delivery of agricultural information and agricultural products.

BACKGROUND

The business of agriculture requires that an agricultural producer have ready access to a variety of information. To promote a profitable operation, for example, an agricultural producer ordinarily tracks information relating to yield, marketability, and market price. For increased crop yield, agricultural producers seek information concerning the effectiveness of particular seed varieties, agricultural chemicals, fertilizers, and growing methods. Similarly, for increased animal production, agricultural producers seek information concerning the effectiveness of particular feed formulations, pharmaceuticals, and growing methods.

Further, in developing a marketing plan, the agricultural producer should be cognizant of market trends and projections, as well as day-to-day pricing activity. The agricultural producer also should be aware of the existing and projected state of risk factors such as drought, hail, wind, frost, plant disease, and insects. Other issues such as shifts in global production capacity and government regulation add to the number of issues of interest to the typical agricultural producer.

Existing sources of agricultural information include radio, television, trade publications, newspapers, email newsletters, internet sites, and interaction with representatives of agricultural products and services companies.

Based on available information, the agricultural producer contracts for purchase and delivery of agricultural inputs, e.g., seed, equipment, agricultural chemicals, and fertilizer, from farm service centers located near the producer's operations. Similarly, the agricultural producer contracts for sale and delivery of agricultural outputs, e.g., crops and animal products, to nearby output processing facilities.

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SUMMARY

The present invention is directed to a system and method for exchange of agricultural information and products using a global computer network such as the world wide web. The system and method can be configured to deliver a large body of agricultural information, yet permit individual agricultural producers to access information that is focused on the producers' relationships with providers of agricultural inputs and processors of agricultural outputs, as well as one or more categories of personal or regional interest as desired.

The information can be focused, for example, on a particular geographic region, output processing facility, input retail facility, crop variety, or livestock type. Each agricultural producer can be assigned to one or more of the categories, and receive subsets of information based on that assignment. In this manner, the producer is tuned to the information most relevant to its day-to-day agricultural operations. In delivering focused information, the system and method take into account the logistical realities of the agricultural business in terms of the need for local or regional delivery of inputs and outputs.

In particular, agricultural inputs and outputs may take the form of thousands of pounds of grain, seed, fertilizer, or chemicals that generally are not susceptible to cost-effective shipment over long distances to and from an agricultural producer. As an illustration, the commercial overnight shipping services used for conventional web-based order fulfillment, such as Federal Express, UPS, and the like, generally are not accustomed to delivering several tons of fertilizer. Instead, the producer ordinarily takes delivery of inputs from local or regional facilities, either by delivery or pickup, and contracts with local or regional output processors, such as grain elevators, for delivery of outputs. In light of this logistical reality, the system and method can be configured to provide information to agricultural producers situated globally, but focus the information accessed by each producer based on local or regional considerations.

In one example, an agricultural producer may be assigned to a geographic region in which it resides, and thereby receive a subset of information that corresponds to that region. In another, the producer can be assigned to an output processor, e.g., a grain elevator or processing plant, located nearest the producer's operations. As a further example, the producer can be assigned to an agricultural

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input provider, such as a farm service center, located near the producer's operations. The farm service center may take the form of an independent retailer or be operated by a manufacturer of agricultural inputs. The farm service center may sell agricultural inputs such as seed, equipment, agricultural chemicals, and fertilizer.

Also, without regard to geography or proximity to an input provider, the producer can be assigned to a category of corn producers or cattle ranchers, or other agricultural specialties. Notably, some producers may be assigned to a combination of different categories. The combination of categories forms a user profile that can be used to select the subsets of information provided for access by each agricultural producer.

Based on the profile, the producer is permitted to gain network access to selected subsets of the larger body of information, e.g., via a web browser. In this manner, the producer quickly and conveniently accesses the most relevant information, while avoiding information that provides little value. A web server associated with the system and method may be configured to query a new producer for profile information relating to the above categories.

In many cases, entry of a single item of information, such as geographic region or residence, will permit the web server to associate the producer with other categories, such as nearest input provider or output processor facilities. The profile can be maintained in a persistent manner for repeated visits by the producer. Characterization of each producer serves to focus the information offering on both producer-specified areas of interest and predicted areas of interest.

A grain producer in a particular county, for example, will be most interested in price information published by local grain elevators. After all, the grain producer typically will deliver its output to one of those nearby facilities, and not a facility in a remote location. Similarly, the same grain farmer will be most interested in weather, crop growth, pest, and disease information pertinent to the region in which the producer is located. Studies concerning the effectiveness of particular hybrid seeds may be irrelevant to producers in a region where the pertinent crops are not grown. Moreover, the grain farmer ordinarily will have no interest in pricing or orders for inputs in a far-away region, inasmuch as its supply typically will come from a nearby facility. At the same time, however, particular subsets of information may be relevant to producers in different regions. For example, corn producers in Iowa and Illinois

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may desire access to similar subsets of general information concerning corn production.

As another example, a cattle rancher may have little interest in weather and corn growth information. Instead, the rancher will be more interested in local cattle market activity, and prices for cattle feed, pharmaceuticals, and the like. On the other hand, a grain producer and cattle rancher may desire access to common information such as financing and equipment pricing information. Also, many producers may be involved in different types of operations. For example, a cattle rancher may grow grain for consumption by his cattle as well as sale to market. Similarly, a beet farmer may grow small grains such as barley and wheat, and therefore have an interest in information relating to several different types of crops that contribute to his overall operation.

The categorization of agricultural producers for information delivery also serves as an infomediary mechanism for communication between producers and retailers, producers and processors, and different producers. Upon association of a producer with a particular output processor, for example, the information delivered to the producer may include general information and even personal messages from the proprietor of the applicable facility. The information may include, for example, pricing, scheduling, and capacity information.

Similarly, the information may include messages from retailers advertising special pricing for producers assigned to the category. In this manner, the messages are focused on those producers most concerned with their content. Hybrid corn seed pricing information reaches corn producers, for example, rather than dairy farmers. Also, producers may correspond with nearby input providers and output processors. In some cases, the web server may facilitate online order submission whereby the producer may purchase agricultural inputs for local delivery. Moreover, the web server can be arranged to provide an on-line contracting dialog with processors of agricultural outputs.

Another aspect of the infomediary mechanism may be the ability to collect survey information from the producers for sharing with other producers and/or proprietors of production facilities. For example, producers within a particular category, e.g., corn growers in Dekalb county, submit corn growth status, storm damage, soil characteristics, pest damage, disease, and the like to a web server as crop

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survey information. The web server then may compile the information, with or without human intervention. The information can be delivered to the producers assigned to the category, or to other interested entities.

The producers can be provided with access to the survey information to compare notes and obtain a relative measure of their individual crop health and growth status. Similarly, proprietors of processing facilities can access the information for planning purposes. Retailers may find the information useful for selection of particularly well-received agricultural inputs to sell the next growing season. Again, because the relevance of the information is focused on a particular category of producers and proprietors, those entities are given convenient access to the information.

The present invention provides, in one embodiment, a method for delivery of agriculture-related information to agricultural producers via a global computer network, the method comprising assigning each of the producers to one of several categories, designating subsets of the information for each of the categories, and providing the producers assigned to one of the categories with network access to information subsets designated for the respective category.

In another embodiment, the present invention provides a system for delivery of agriculture-related information to agricultural producers via a global computer network, the system comprising a database server that stores the agriculture-related information, and a network server that assigns each of the producers to one of several categories, designates subsets of the information for each of the categories, and provides the producers assigned to one of the categories with network access to information subsets designated for the respective category.

The categories may include producers located in selected geographical regions, producers located near selected input production facilities, producers located near selected output production facilities, producers located near selected agricultural retail facilities, producers that produce selected agricultural products, or combinations of such categories. At least some of the information subsets are designated for more than one of the categories. For assignment, the producers can be identified prior to providing access to the information, with the categories being determined based on the identification. In particular, profiles can be generated that assist in assignment of

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the producers to categories based on the types of products produced, types of products purchased, personal interests, and other producer characteristics.

In a further embodiment, the present invention provides a method for exchange of agriculture-related information and products using a global computer network, the method comprising assigning agricultural producers to selected agricultural business entities based on proximity between the producer and the business entity, providing the producers assigned to each of the business entities with network access to information subsets designated for the respective business entity, accepting orders for receipt of agricultural inputs or delivery of agricultural outputs for each of the producers via the network, and filling the orders using physical facilities associated with the business entities to which the producers are assigned.

In an added embodiment, the present invention provides a system for delivery of agriculture-related information to agricultural producers via a global computer network, the system comprising a database server that organizes the agriculture-related information, and a network server that assigns agricultural producers to selected agricultural business entities based on proximity between the producer and the business entity, provides the producers assigned to each of the business entities with network access to information subsets designated for the respective business entity, accepts orders for receipt of agricultural inputs or delivery of agricultural outputs for each of the producers via the network, and designates physical facilities associated with the business entities to which the producers are assigned for fulfillment of the orders.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block diagram illustrating a system for delivery of information to agricultural producers via a global computer network;

FIG. 2 is a conceptual diagram of the content of a web page illustrating presentation of information to an agricultural producer;

FIG. 3 is a flow diagram illustrating generation of a user profile;

FIG. 4 is a flow diagram illustrating selection of information subsets based on a user profile;

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FIG. 5 is a conceptual diagram of the content of a web page illustrating presentation of information that facilitates submission of orders for inputs and output contracts; and

FIG. 6 is a flow diagram illustrating submission of orders and output contracts.

Like reference numbers and designations in the various drawings indicate like elements.

DETAILED DESCRIPTION

FIG. 1 is a block diagram illustrating a system 10 for delivering agricultural information to agricultural producers via a global computer network, such as the world wide web 12. System 10 can be used to practice methods for delivering agricultural information to agricultural producers via a global computer network. As shown in FIG. 1, system 10 may include a number of agricultural producers 14, 16, 18, 20 situated at computers connected to web 12. Agricultural retailers 22 and agricultural purchasers 24 may be connected to web 12 via computers for access to system 10.

With further reference to FIG. 1, system 10 also may include a network server in the form of web server 26, as well as a database server 28, an agricultural information database 30, a user profile database 32, a system administration terminal 34, a file server 36, a file archive 38, and an FTP server 40. Web server 26, database server 28, agricultural information database 30, user profile database 32, file server 36, and file archive 38 together form an agricultural information server. Web server 26 interacts with database sever 28 and file server 36 to assemble content organized by agricultural information database 30 and stored in file archive 38 for access by agricultural producers 14, 16, 18, 20 based on user profiles stored in user profile database 32. The information content can be authored in part by the entity providing web server 26, by retailers 22 and purchasers 24, and even by producers 14, 16, 18, 20. Some of the information can be stored in file archive 38. Much of the information can be culled, however, from other web sites and resources on world wide web 12 by hypertext linking.

Web server 26 may take the form of a single web server or multiple web servers, and may execute server page scripts. The scripts can be written as Lotus Notes forms, Active Server Pages (ASP), CGI scripts, Java servlets, or in other

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server-side scripting languages suited to building and maintenance of database-driven web sites. Web server 26 interacts with database server 28 to provide network users with access to agricultural information contained in a agricultural information database 30. Web server 26 assembles the necessary content for web pages requested by producers 14, 16, 18, 20, and accepts information from the producers for addition to database 30. Database server 28 may be any type of database server suitable for web-oriented database applications, e.g., an OLEDB or ODBC driver. In response to queries from web server 26, database server 28 locates appropriate records within agricultural information database 30. User profile database 32 defines user profiles, however, that limit the scope of information available to particular producers based on relevance or personal interest.

The computers used by producers 14, 16, 18, 20, retailers 22, and purchasers 24 may take the form of personal computers, Macintosh computers, workstations, handheld computing devices, or the like, equipped with telecommunications services for access to network 12. The computers can be connected to world wide web 12 directly or via an internet service provider, and communicate using a network protocol such as TCP/IP. Each computer preferably executes a graphical viewing application such as a web browser to access resources residing on other computers attached to network 12. In particular, the web browser permits producers 14, 16, 18, 20, retailers 22, and purchasers 24 to view HTML web pages generated by web server 26. Notably, some producers 14, 16, 18, 20 may be equipped with handheld devices, which may be particularly useful for farmers in the field or barn.

In system 10, agricultural producers 14, 16, 18, 20 may include farmers, ranchers, and the like. Agricultural producers 14, 16, 18, 20 may produce a variety of crops such as corn, soybeans, small grains, larger vegetables, and fruits, animal products such as milk and eggs, and livestock such as cows, hogs, and chickens. Agricultural retailers 22 may include firms engaged in the sale of agricultural inputs such as feed, seed, chemicals such as pesticides and herbicides, pharmaceuticals, and fertilizer, as well as equipment such as tractors, milking machines, conveyors, and building and fence materials. Agricultural purchasers 24 may include firms engaged in processing and resale of agricultural outputs, such as firms with grain processing facilities, livestock yards, and the like. In some cases, purchasers 24 may contract for handling of outputs by processing facilities. The number of network users in system

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10, including producers 14, 16, 18, 20, retailers, 22, and purchasers 24, can be virtually unlimited. System operation may be subject, of course, to bandwidth limitations of server 26 and web 12.

In operation, agricultural producers 14, 16, 18, 20 access web server 26 via one or more URL's and, by web page interaction, request access to information stored in agricultural information database 30. In one embodiment, each producer 14, 16, 18, 20 registers as a user upon the first visit to the web site provided by web server 26. Registration via web server 26 may involve selection of a username and password. In response, web server 26 creates an account for the agricultural producer. Alternatively, accounts can be created in advance for each producer 14, 16, 18, 20, e.g., by telephone or a meeting with a person associated with the web site. A system administrator 34, for example, may reserve authority over creation of accounts, perhaps verifying the identities of producers 14, 16, 18, 20. In each case, web server 26 may present one or more web pages containing content and queries for development of a user profile that focuses the information to be accessed by each agricultural producer. The dialog driven by the web pages can be aided by conventional input media such as check boxes, radio dials, text entry boxes and the like.

To develop a user profile, pages generated by web server 26 may query new users for information such as a geographic region in which the producer's operations are located. The producer may enter a zip code, for example, or other address-related information. As an alternative, the producer may enter or select from a list one or more farm service centers or other retail outlets with which the producer does business. The producer may designate an output purchaser in a similar manner. In developing the user profile, the address information can be correlated with nearby crop input retailers and crop output purchasers, in the case of crop producers, as well as livestock inputs retailers and livestock output purchasers, in the case of livestock and animal product producers. Of course, many producers may combine both types of operations. Determination of the types of crops or livestock produced also will be important in identifying appropriate nearby retailers and producers. In particular, information can be focused not only on the basis of location, but also types of commodities produced by the agricultural producers 14, 16, 18, 20.

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Again, the dialog generated by web server 26 may permit producers 14, 16, 18, 20 to specify particular retailers and purchasers in which the producers are interested. Also, each producer 14, 16, 18, 20 may specify particular areas of interest to expand or contract the scope of information made available. Areas of interest may include, for example, alternative crops, scientific studies, political coverage, and even sports. In this manner, producers 14, 16, 18, 20 can be assigned to different categories that correspond to particular retailers, particular purchasers, particular crops, or particular livestock, as well as categories corresponding to information of general interest. Subsets of the larger body of information stored in archive 38 then can be assigned to the various categories. When one of the producers 14, 16, 18, 20 visits a site maintained by web server 26, he is given network access to the information subsets designated for the respective categories in his user profile. The information content delivered to agricultural producers 14, 16, 18, 20 can be generated by a system administrator 34

Some of the information subsets may be designated for more than one of the categories. For example, producers located near different corn processing facilities in distant states may nevertheless desire similar information relative to corn hybrids or GMO corn. Similarly, global markets information for a particular crop may be of universal interest among producers of that crop, without regard to location. The information subsets preferably are not duplicated, however, but rather stored as records in archive 38 and located and retrieved for categories specified in different user profiles based on the content of agricultural information database 30 and user profile database 32. Following submission of queries to database server 28 and retrieval of file addresses, web server 26 interacts with file server 36 to retrieve the appropriate components from archive 38 and assemble them in web pages for access by producers 14, 16, 18, 20.

The information provided by web server 26 can be presented in a text or graphic format, and may include hypertext links to each informational item. Also, the information may include downloadable files, e.g., in PDF format, that convey additional information. Examples of documents that could be conveyed to producers 14, 16, 18, 20 as downloadable files are USDA reports, chemical studies, yield surveys, consumption statistics, and the like. Publicly available information can be provided by simply incorporating a hypertext link to a publicly accessible web site.

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In the case of USDA reports, for example, the web page may include a link to the USDA home page at www.usda.gov. Additional links can be provided to other regulatory and research organizations around the world, and designated for access by different categories to which the producers are assigned.

Agricultural retailers 22 and purchasers 24 also can access web server 26 to access information and upload information for delivery by producers 14, 16, 18, 20. For example, retailers 22 and purchasers 24 may access the web site provided by web sever 26 over world wide web 12. For submission of agricultural information, such as a price list or quote, retailers 22 and purchasers 24 access web server 22 and select an appropriate web page. Web server 22 then kicks off a series of interactive web pages requesting user input. A first web page, for example, may request the entry of the retailer or purchaser name, a title for the information record, and perhaps a brief description or categorization of the information, e.g., seed pricing, herbicide pricing, corn contract premium bid. Another web page may prompt the retailer or purchaser for any uploadable files that describe the information in greater detail. The files are uploaded to the web server or, alternatively, could be uploaded to FTP server 40. As with definition of a user profile, the dialog driven by the web pages can be aided by conventional input media such as check boxes, radio dials, text entry boxes, and the like.

A firewall preferably is provided as a security measure. The firewall separates database server 28 and file server 36 from web server 26 to avoid unauthorized intrusions into the information provided by retailers and purchasers 22, 24, as well as user profile information. Due to its nature as a repository of information concerning personal accounts and user profiles, the security and confidentiality of database 30 and file archive 38 is a serious concern. To promote increased security and confidentiality of client information, web pages generated by web server 26 can be communicated to producers 14, 16, 18, 20 using public key encryption mechanisms such as SSL. Other security measures, such as the use of login accounts for network users, as described above, can provide added benefits. In preferred embodiments, however, the information provided by system 10 is accessible without extensive login procedures in order to maintain the level of convenience for which web browser access is known.

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For purpose of illustration, FIG. 2 shows an exemplary web page viewed by a producer 14, 16, 18, 20 in one embodiment of system 10. FIG. 2 is a diagram of a web page illustrating a number of informational topics presented to an agricultural producer having operations in a hypothetical region called "County." As an alternative, the web page of FIG. 2 can be configured with topics based on selection of a particular business entity, such as an input provider or output purchaser. In this manner, the web page can be customized to provide information for the customers of a particular business while providing access to other relevant information on a regional or user preferences basis.

Upon access to web server 26, the respective agricultural producer 14, 16, 18, 20 may be presented with a personal greeting, e.g., "Welcome Dave Moore," indicated by reference numeral 41. The set of topics will vary according to the producer's user profile, which may exclude many topics. The topic titles and the items listed under them are represented as hypertext links to other web pages. Upon selection of one of the topical hypertext links, the user is presented with another web page that conveys content associated with the topic or additional links. The content of the example of FIG. 2 may be particularly relevant for grain producers within the County region.

As shown in the example of FIG. 2, the home web page may include a number of static buttons that appear on each successive page accessed by the producer. The buttons may appear in a page that frames successive pages, or appear within each excessive page. The static buttons may include, for example, a "Home" button 42 that links to the home page, a "Bids" button 44 that links to information concerning commodity bids posted by purchasers, such as grain elevators, within or near County, a "County News" button 46 that links to agricultural news items of particular relevance to County, a "County Info" button 48 that links to information about local regulations or policies within County, a "Quotes" button 48 that links to market quote information for crops, livestock, or other agricultural products relevant to producers in County, a "Retailer Info" button 50 that links to information about particular retailers operating within or near County or providing inputs desired by producers within County, a "Weather Button" 52 that links to weather-related information that is particularly relevant to producers within County, and a "My Accounts" button 54 that

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links to information concerning the status of personal accounts with retailers and purchasers with whom the respective producer does business.

In addition to the static buttons, the web page shown in FIG. 2 also may include a number of topics such as "County Elevator Hours," indicated by reference numeral 58, "County Bids," e.g., local elevator bids, indicated by reference numeral 60, "Quotes," indicated by reference numeral 62, "Retailer News," indicated by reference numeral 64, "County News," indicated by reference numeral 66, "Ag Technology News," indicated by reference numeral 68, "Crop Reports," indicated by reference numeral 70, "Weather News," indicated by reference numeral 72, "Livestock News," indicated by reference numeral 74, "Weather Maps," indicated by reference numeral 76, "Surveys," indicated by reference numeral 78, and "Farmer Forum," indicated by reference numeral 80. The topics can be arranged in boxes, as shown in FIG. 2, or otherwise presented in a distinctive manner to permit ease of access by the producer. The possibilities for additional topics are almost endless. The objective is not to bury the producer in an excessively large body of information, however, but rather focus the information based on relevance and interest.

Some topics, like County Elevator Hours 58, County Bids 60, and Quotes 62, may simply contain text information. As indicated by Quotes 62, for example, scrolling within the topic box can be provided to view a long list of information. Other topics, like Retailer News 64 and County News 66, may contain item titles that form hypertext links to the text of a new story or other informational item. Additional topics, such as Weather Maps 76, may provide graphic information. Many topics, like Ag Technology News 68 and Crop Reports 70, will provide content prepared by the entity that maintains web server 26 and stored in file archive 38, or content provided by linking to web sites or other resources on web 12. Some topics, like Surveys 78, may provide content that has been compiled or otherwise generated based on input by producers 14, 16, 18, 20, retailers 22, and purchasers 24. Further, topics like Farmer Forum 80 may provide an online communication mechanism that supports multiple discussion threads, chat rooms, and other conventional internet utilities, but generally with agriculture-related themes.

In each case, however, the topics are driven by subsets of information designated for categories to which the individual producer is assigned. In other words, the user profiles generally result in different content and a customized online

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experience for each producer. Notably, a web page as shown in FIG. 2 may include a button, link, or other medium entitled "Customize Your Page," as indicated by reference numeral 82, which permits a producer to modify his user profile to include or exclude information over time. Also, within Retailer News 64, or by other means, the web page may provide a "My Accounts" item 84 that permits a producer to review account information for different retailers. Indeed, an online ordering mechanism can be readily incorporated with the "My Accounts" information, enabling the producer to order agricultural inputs for delivery. In some cases, the online ordering mechanism can be arranged to permit the producer to make offers or communicate acceptance of bids made by purchasers. In this manner, the producer and retailer or purchaser can use the web site as an infomediary to convey price, bid, and quote information, as well as an e-commerce mechanism for arriving at a firm agreement and placing an order.

FIG. 3 is a flow diagram illustrating an exemplary method for generation of a user profile using a dialog generated by web server 26 via one or more web pages. As indicated by block 84 in FIG. 3, upon access to web server 26, each agricultural producer 14, 16, 18, 20 is prompted to identify itself, e.g., by entry of a username and password. If the producer 14, 16, 18, 20 is a new user, web server 26 prompts the producer for a desired username and password, as indicated by blocks 86 and 88, respectively. Alternatively, a username and password simply may be assigned. Web server 26 also queries the producer for its location, e.g., by entry of a city, county, state, or zip code, as indicated by block 90. Alternatively, in lieu of some or all of the location information, the user can be prompted to enter or select a particular business entity such as an input provider or output purchaser. Also, the producer may be prompted to indicate the type of agricultural operation in which it is engaged. As indicated by block 92, for example, web server 26 queries whether the producer produces crops. If so, as indicated by block 94, web server 26 queries the types of crops, e.g., corn, wheat, beets, etc.

Using the location information and crop type information, web server 26 interacts with database server 28 to map the user profile for the producer to one or more nearby crop input retailers, as indicated by block 96. If the producer raises corn, for example, it is mapped to retailers selling corn hybrids and other inputs relevant to corn production. Moreover, the user profile is mapped to a retailer situated relatively

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proximate to the producer's operations. As indicated by block 98, the user profile also is mapped to nearby crop output purchasers based on the crop type and location information. If the producer raises soybeans, for example, the user profile is mapped to nearby elevators or soybean processing plants. Again, in delivering particular information, system 10 takes into account the logistics and conventions of agricultural production in terms of local delivery of a producer's inputs and outputs.

Along with identification of appropriate retailers and purchasers, web server 26 queries the producer for areas of personal interest or other information needed by the producer, as indicated by block 100. A corn producer, for example, may be interested in growing methods used in other parts of the country or world, even though they are not immediately relevant to his operation. Moreover, a corn producer may simply desire access to news and sports headlines, along with the agricultural information, in order to consolidate all of the producer's areas of interest into a single information source. Based on the location, crop type, retailer, purchaser, and personal interest information, web server 26 and database server 28 builds user profile, which is stored in user profile database 32 for access each time the respective producer accesses the web server. The user profile specifies the particular types of information appropriate for each producer, and provides pointers to the corresponding entries in agricultural information database 30 which, in turn, provide address information for the corresponding components in file archive 38.

As further shown in FIG. 3, some producers may be engaged in production of crops and livestock, or solely livestock. Accordingly, as indicated by block 104, web server 26 also queries the producer as to whether it raises livestock and, as indicated by block 106, the types of livestock it produces. Based on the location information and livestock type information, web server 26 maps the producer to particular retailers of livestock inputs such as feed and pharmaceuticals located near the producer, as indicated by block 108. Also, as indicated by block 110, the producer is mapped to nearby livestock purchasers such as cattle yards and meat processors, as indicated by block 110. If the producer is not engaged in crop production or livestock production, web server 26 simply forwards the dialog to acquisition of personal information, as indicated by branches 97, 99 and block 100. Based on the crop, livestock, and/or personal information, the user profile is built, as indicated by block 102. Of course,

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web server 26 can be arranged to prompt the user for other types of output information, such as large vegetables and fruits, animal products, and the like.

FIG. 4 is a flow diagram illustrating selection of information subsets based on a user profile. Upon acceptance of a username and password, as indicated by blocks 112, 114, respectively, web server 26 interacts with database server 28 to retrieve the appropriate user profile from user profile database 32, as indicated by block 116. As indicated by block 118, the user profile is used to map to selected subsets of information. In particular, the user profile provides pointers to entries in agricultural information database 30. The database entries provide addresses of corresponding files within file archive 38. The files serve as components for assembly of web pages by web server 26. In particular, as indicated by block 120, web server 26 retrieves the information subset components from file archive 38 via file server 36. Web server 26 then proceeds to build a personalized web page for the producer with the retrieve components, as indicated by block 122. The information content of successive web pages is driven by user selection, but still constrained by the user profile for each producer.

Notably, system 10 can be configured to facilitate placement of orders for delivery of agricultural inputs and purchase or agricultural outputs via a global computer network while maintaining a focus on the geographic aspect of the transaction. Specifically, the agricultural producer may order seed or feed from an entity with nationwide or worldwide operations. Nevertheless, the order is fulfilled on a regional basis by facilities located proximate to the agricultural producer's operations. In this manner, system 10 blends the power of global information access with the realities of agricultural logistics and local order fulfillment. The design of system 10, in particular, takes into account the different crops, growing conditions, retailers, processing facilities, and pricing applicable to particular regions.

Similarly, when contracting for delivery of agricultural outputs, system 10 focuses the information accessed by the agricultural producers to subsets that are relevant in terms of region, crop type, and the like. For example, a grain farmer contemplating marketing options for his crop will be most concerned about general and premium pricing at nearby elevators and processing facilities. After all, a producer in Minnesota ordinarily will not be delivering its crop output to a facility in Illinois. For these reasons, in addition to limiting the scope of information available

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to the agricultural producer, system 10 provides an information exchange that builds and maintains relationships with local retailers and processing facilities. Once equipped with such information, the agricultural producer can communicate with the appropriate input provider or output purchaser by accessing the "My Account" link, or some other similar link.

FIG. 5 is a conceptual diagram of the content of a web page illustrating presentation of information that facilitates submission of orders for inputs and output contracts. As shown in FIG. 5, the web page, entitled "MY ACCOUNTS," may provide a dialog for purchase of agricultural inputs, as indicated by block 124, as well as a dialog for output contracting, as indicated by block 126. The inputs dialog may provide a number of different categories of agricultural inputs, such as seed, chemicals, fertilizer, and equipment, each of which may operate as a hypertext link. Along with each category, the dialog pay post particular retailers that distribute the desired inputs within the region occupied by the producer's operations. In this manner, the producer may select a category as well as a desired producer. Upon selection, the producer may be selected with pricing and descriptive information associated with each input. In some embodiments, it may be desirable to provide comparative pricing for similar inputs among several retailers. In each case, upon selection of an order button or other similar input media, the producer is provided with access to an order dialog that may permit entry of a quantity and desired delivery date. In addition to the category information, a search utility can be provided to find particular input information. Also, the inputs dialog may provide access to personal account status information for the producer.

In addition to purchase of inputs, system 10 also may permit a producer to contract for sale of its outputs, e.g., crops, livestock, animal products, and the like. With a corn producer, for example, the output contracting dialog may provide local bid information. In the example of FIG. 5, the output contracting dialog provides bid information for hypothetical "COUNTY NORTH" and "COUNTY SOUTH" elevators. A producer may select one of the bids by simply clicking on it and hypertext linking to additional information and a dialog for submission of an offer. Also, with each purchaser, a "PREMIUMS" link can be provided to provide access to any premium bids that may be available. A link to information concerning the producer's account status can also be provided. Following selection of one of the

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bids, the user is presented with a dialog for submission of an offer. The offer is then transmitted to the appropriate output purchaser, e.g., a grain elevator. Acceptance then can be transmitted back to the producer via email or posting to the producer's account information, along with appropriate terms and conditions and scheduling information.

FIG. 6 is a flow diagram illustrating submission of orders for purchase of inputs from retailers. A process similar to that illustrated by FIG. 6 also may be carried out for submission of offers to sell outputs. As indicated by block 128, web server 26 assembles content that displays input categories and retailers to each producer. Upon selection of an input category and retailer, as indicated by block 130, web server 26 assembles additional web page content concerning pricing and other information about the inputs, as indicated by block 132. Again, the pricing information may include comparative pricing data. Also, the information may include hypertext links to web sites or other resources providing details about the manufacturer or surveys or studies concerning the quality or effectiveness of the particular input. Upon selection of an input product, as indicated by block 134, web server 26 generates content and input media that queries the user for a desired quantity and shipment date for the input, as indicated by block 136. The order is then transmitted electronically to the corresponding retailer, as indicated by block 138. The retailer may respond to the producer with confirmation via email or posting to the user's account. In either case, the account information is updated, as indicated by block 140, to reflect the transmission of the order.

Notably, upon submission of an order, the applicable input or output is delivered to or from a local entity such as a farm store or farm service center in the case of inputs, or an elevator or other point of delivery in the case of outputs. The inputs or outputs can be delivered or picked up by the producer or the business entity with which the producer has contracted. Again, agricultural inputs and outputs ordinarily are inappropriate for cost-effective long-distance shipping between the producer and the seller or purchaser. Therefore, the exchange of the inputs generally takes place within a local or regional area. System 10 facilitates exchange of information using a global computer network, but focuses the information to reflect the logistical challenges of agricultural business. In this manner, system 10 can take

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advantage of certain e-commerce aspects of the world wide web without departing entirely from some of the "bricks-and-mortar" realities of agricultural business.

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CLAIMS:

1. A method for delivery of agriculture-related information to agricultural producers via a global computer network, the method comprising:

assigning each of the producers to one of several categories;

designating subsets of the information for each of the categories; and

providing the producers assigned to one of the categories with network access to information subsets designated for the respective category.

2. The method of claim 1, wherein the categories include at least one of producers located in selected geographical regions, producers located near selected input provider facilities, producers located near selected output processing facilities, producers located near selected agricultural retail facilities, and producers that produce selected agricultural products.

3. The method of claim 1, wherein at least some of the information subsets are designated for more than one of the categories.

4. The method of claim 1, further comprising:

identifying each of the producers prior to providing access to the information; and

determining the categories to which each of the producers is assigned based on the identification.

5. The method of claim 1, further comprising:

generating profiles for the producers; and

defining the information subsets for access by each of the producers based on the profile for the respective producer.

6. The method of claim 5, further comprising generating each of the profiles based in part on input received from the respective producer concerning desired information content.

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7. The method of claim 5, wherein each of the profiles specifies types of products produced by the producer, the method further comprising defining the information subsets for access by each of the producers based on the types of products specified in the profile for the respective producer.

8. The method of claim 7, wherein the types of products include at least one of types of crops grown by the producers and types of products include types of livestock raised by the producers.

9. The method of claim 1, wherein each of the information subsets includes at least one of crop growing conditions applicable to one of the geographic regions, weather conditions applicable to one of the geographic regions, market pricing information applicable to one of the geographic regions, fertilizer pricing applicable to one of the geographic regions, agricultural chemical pricing applicable to one of the geographic regions, seed pricing applicable to one of the geographic regions, livestock feed pricing applicable to one of the geographic regions, and agricultural studies applicable to the respective geographic region.

10. The method of claim 9, wherein the market pricing information includes at least one of local grain elevator bids applicable to one of the geographic regions and local livestock bids applicable to one of the geographic regions.

11. The method of claim 1, further comprising:

accepting orders for at least one of livestock feed, seeds, fertilizer, and agricultural chemicals from producers via the network; and

filling the orders through physical facilities proximate to the geographic regions to which the producers are assigned.

12. The method of claim 1, further comprising:

accepting survey information from one or more of the producers within one of the geographic regions; and

adding to the information subsets designated for the geographic regions based on the survey information, wherein the survey information includes crop growing

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conditions applicable to crops grown by the respective producer, estimated crop yield information, weather conditions applicable to crops grown by the respective producer, and future planting plans.

13. The method of claim 1, further comprising:

assigning one or more commercial retailers to one of more of the categories;

accepting commercial information from the commercial retailers; and

including the commercial information in the subsets for the corresponding categories to which the commercial retailers are assigned.

14. The method of claim 1, further comprising:

assigning one or more commercial purchasers to one of more of the categories;

accepting commercial information from the commercial purchasers; and

including the commercial information in the subsets for the corresponding categories to which the commercial retailers are assigned.

15. A system for delivery of agriculture-related information to agricultural producers via a global computer network, the system comprising:

a database server that organizes the agriculture-related information; and

a network server that assigns each of the producers to one of several categories, designates subsets of the information for each of the categories, and provides the producers assigned to one of the categories with network access to information subsets designated for the respective category.

16. The system of claim 15, wherein the categories include at least one of producers located in selected geographical regions, producers located near selected input provider facilities, producers located near selected output processing facilities, producers located near selected agricultural retail facilities, and producers that produce selected agricultural products.

17. The system of claim 15, wherein at least some of the information subsets are designated for more than one of the categories.

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18. The system of claim 15, wherein the network server identifies each of the producers prior to providing access to the information, and determines the categories to which each of the producers is assigned based on the identification.

19. The system of claim 15, wherein the network server generates profiles for the producers, and defines the information subsets for access by each of the producers based on the profile for the respective producer.

20. The system of claim 19, wherein each of the profiles specifies types of products produced by the producer, and the web server defines the information subsets for access by each of the producers based on the types of products specified in the profile for the respective producer.

21. The system of claim 20, wherein the types of products include at least one of types of crops grown by the producers and types of livestock raised by the producers.

22. The system of claim 15, wherein each of the information subsets includes at least one of crop growing conditions applicable to one of the geographic regions, weather conditions applicable to one of the geographic regions, market pricing information applicable to one of the geographic regions, local livestock bids applicable to one of the geographic regions, fertilizer pricing applicable to one of the geographic regions, agricultural chemical pricing applicable to one of the geographic regions, seed pricing applicable to one of the geographic regions, livestock feed pricing applicable to one of the geographic regions, and agricultural studies applicable to the respective geographic region.

23. The system of claim 22, wherein the market pricing information includes local grain elevator bids applicable to one of the geographic regions.

24. The system of claim 15, wherein the network server accepts orders for at least one of livestock feed, seeds, fertilizer, and agricultural chemicals from

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producers via the network, and fills the orders through physical facilities proximate to the geographic regions to which the producers are assigned.

25. The system of claim 15, wherein the categories include producers located in selected geographical regions, further comprising defining each of the geographic regions based on presence of at least one of an output processing facility within the respective geographic region, a livestock feed retail facility within the respective geographic region, a fertilizer retail facility within the respective geographic region, an agricultural chemical retail facility within the respective geographic region, and a seed retail facility within the respective geographic region.

26. The system of claim 15, wherein the network server accepts survey information from one or more of the producers within one of the geographic regions, and adds to the information subsets designated for the geographic regions based on the survey information, wherein the survey information includes at least one of crop growing conditions applicable to crops grown by the respective producer, estimated crop yield information, weather conditions applicable to crops grown by the respective producer, and future planting plans.

27. The system of claim 15, wherein the network server assigns one or more commercial retailers to one of more of the categories, accepts commercial information from the commercial retailers, and includes the commercial information in the subsets for the corresponding categories to which the commercial retailers are assigned.

28. The system of claim 15, wherein the network server assigns one or more commercial purchasers to one of more of the categories, accepts commercial information from the commercial purchasers, and includes the commercial information in the subsets for the corresponding categories to which the commercial retailers are assigned.

29. A method for exchange of agriculture-related information and products using a global computer network, the method comprising:

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assigning agricultural producers to selected agricultural business entities based on proximity between the producer and the business entity;

providing the producers assigned to each of the business entities with network access to information subsets designated for the respective business entity;

accepting orders for receipt of agricultural inputs or delivery of agricultural outputs for each of the producers via the network; and

filling the orders using physical facilities associated with the business entities to which the producers are assigned.

30. A system for delivery of agriculture-related information to agricultural producers via a global computer network, the system comprising:

a database server that organizes the agriculture-related information; and

a network server that:

assigns agricultural producers to selected agricultural business entities based on proximity between the producer and the business entity,

provides the producers assigned to each of the business entities with network access to information subsets designated for the respective business entity,

accepts orders for receipt of agricultural inputs or delivery of agricultural outputs for each of the producers via the network, and

designates physical facilities associated with the business entities to which the producers are assigned for fulfillment of the orders.

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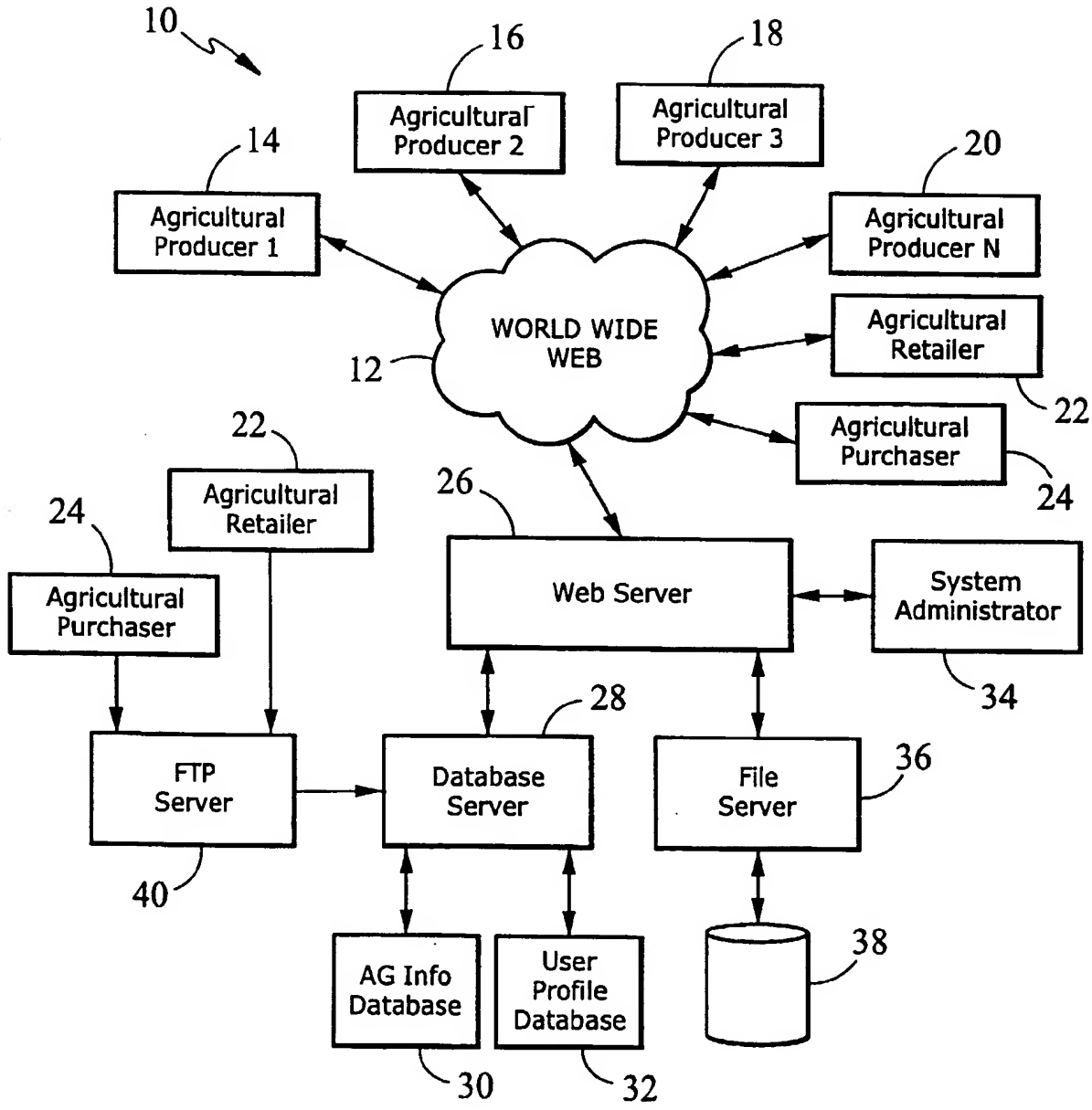

FIG. 1

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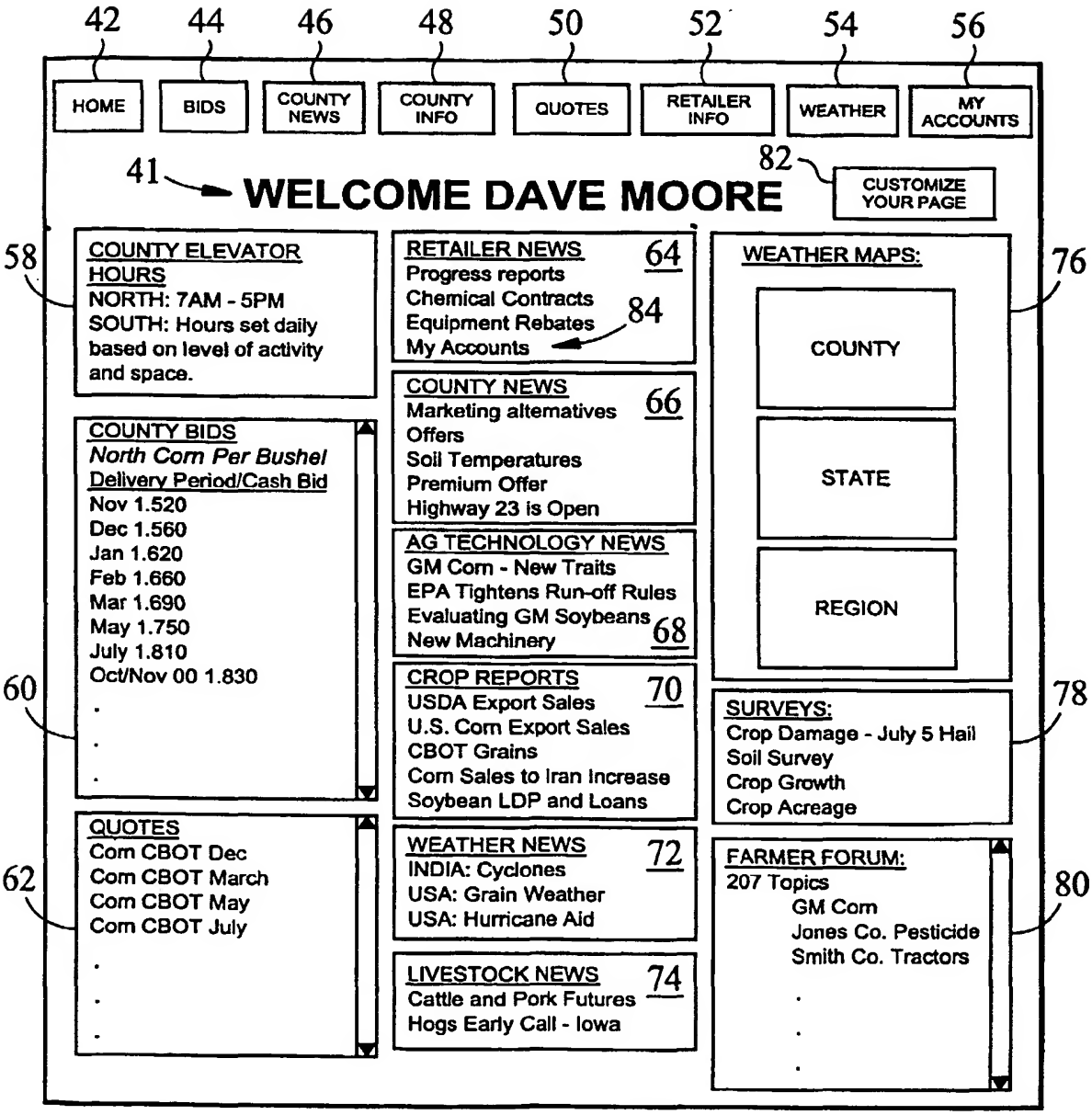

FIG. 2

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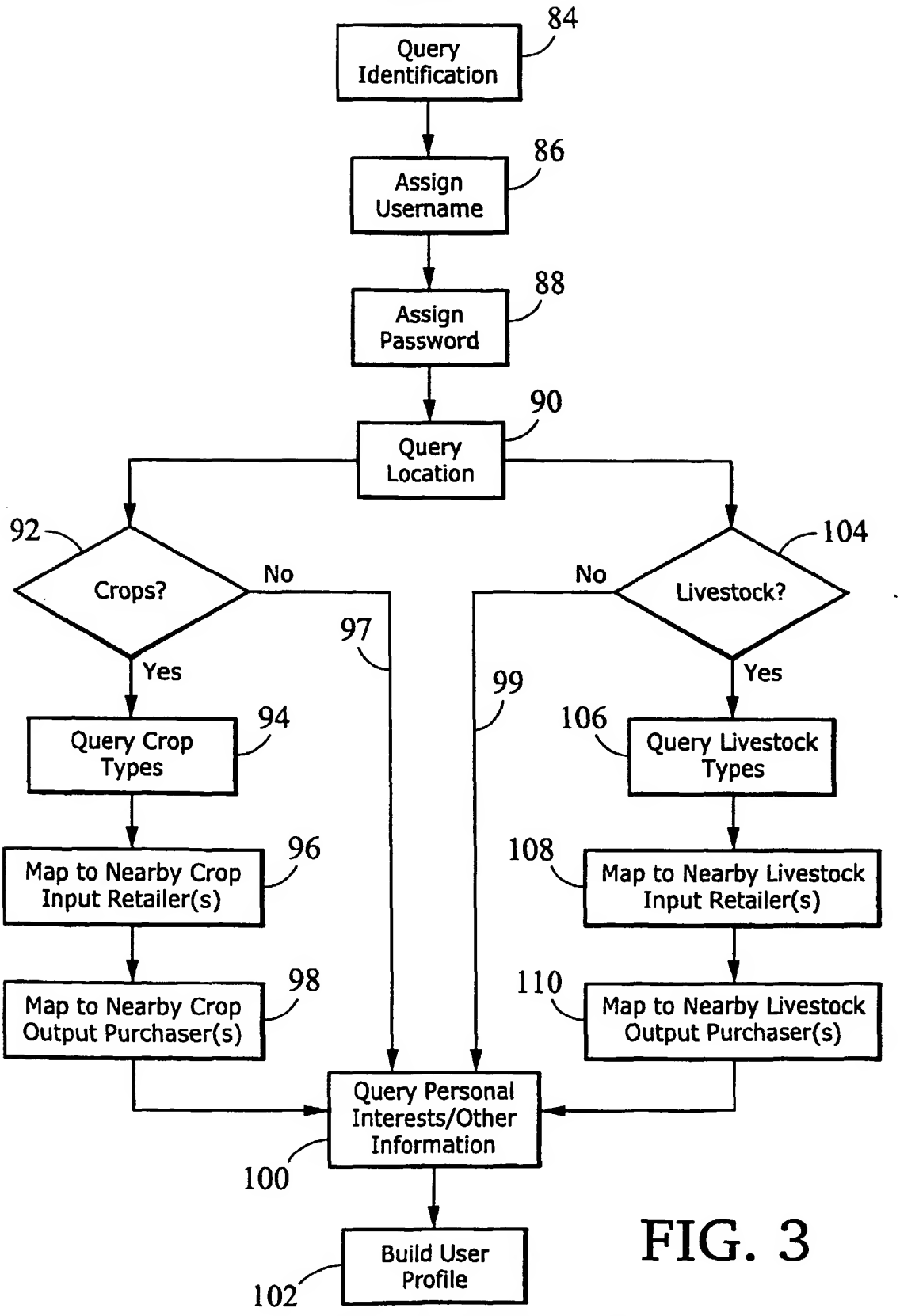

FIG. 3

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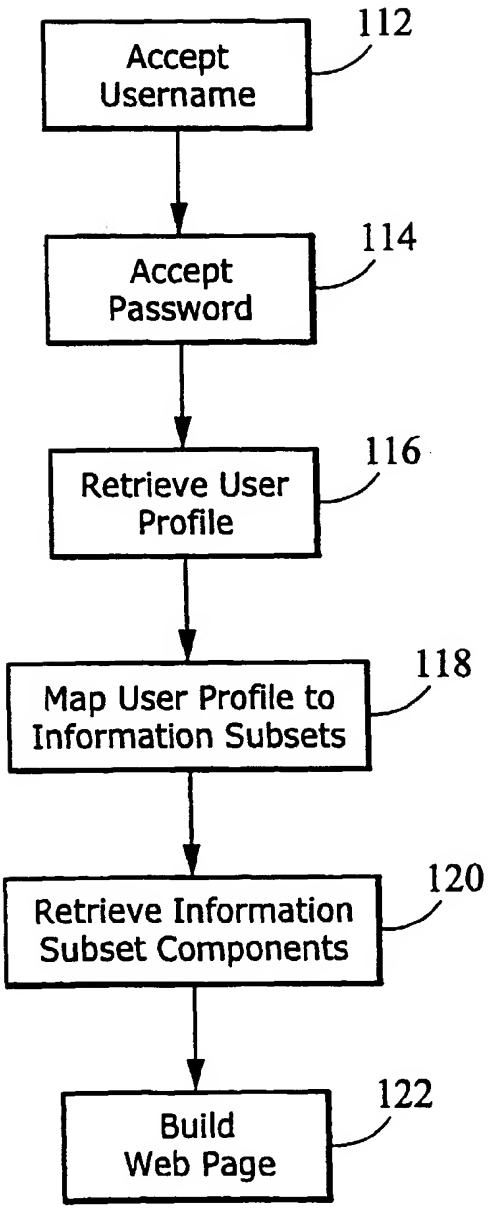

FIG. 4

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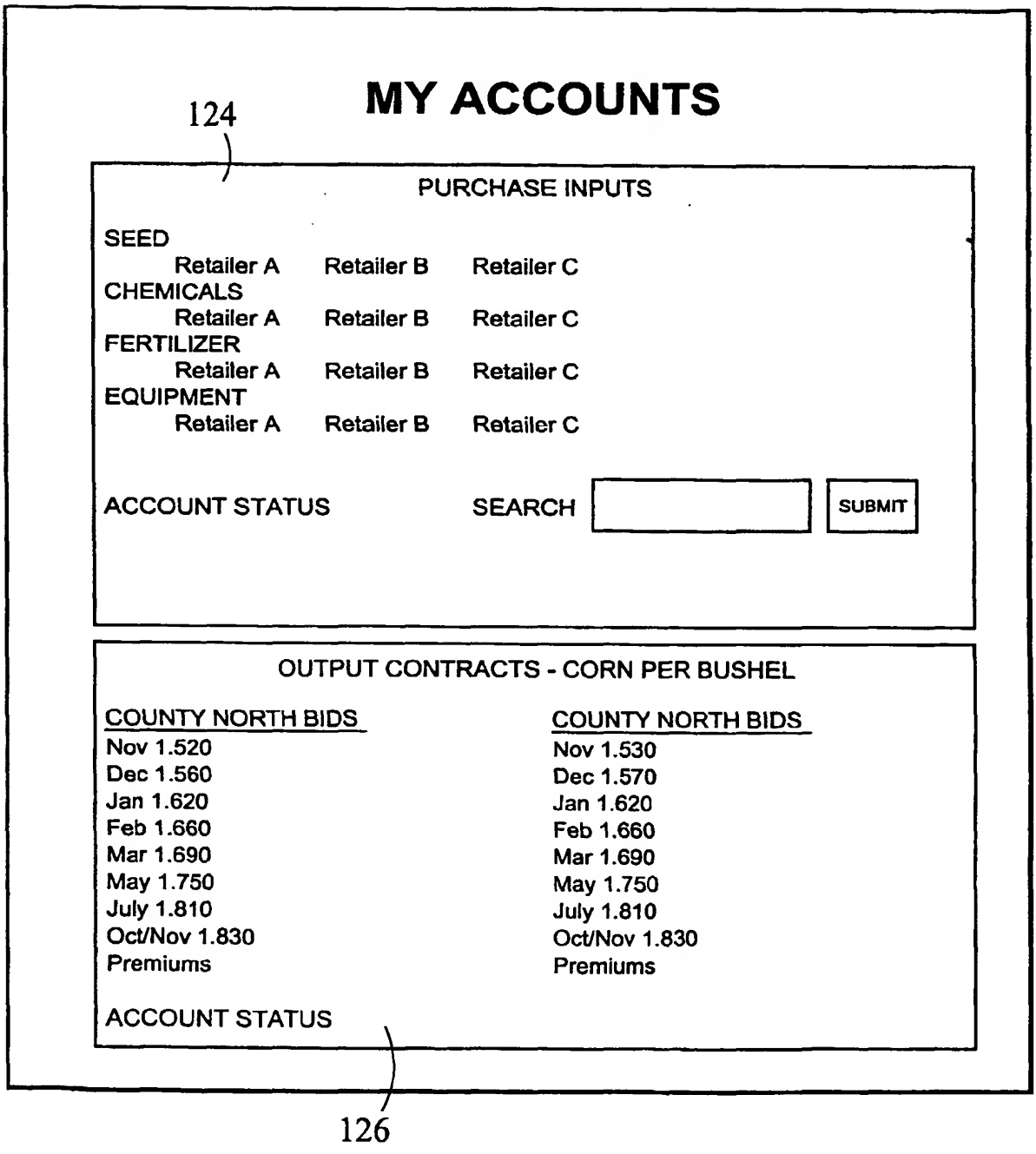

FIG. 5

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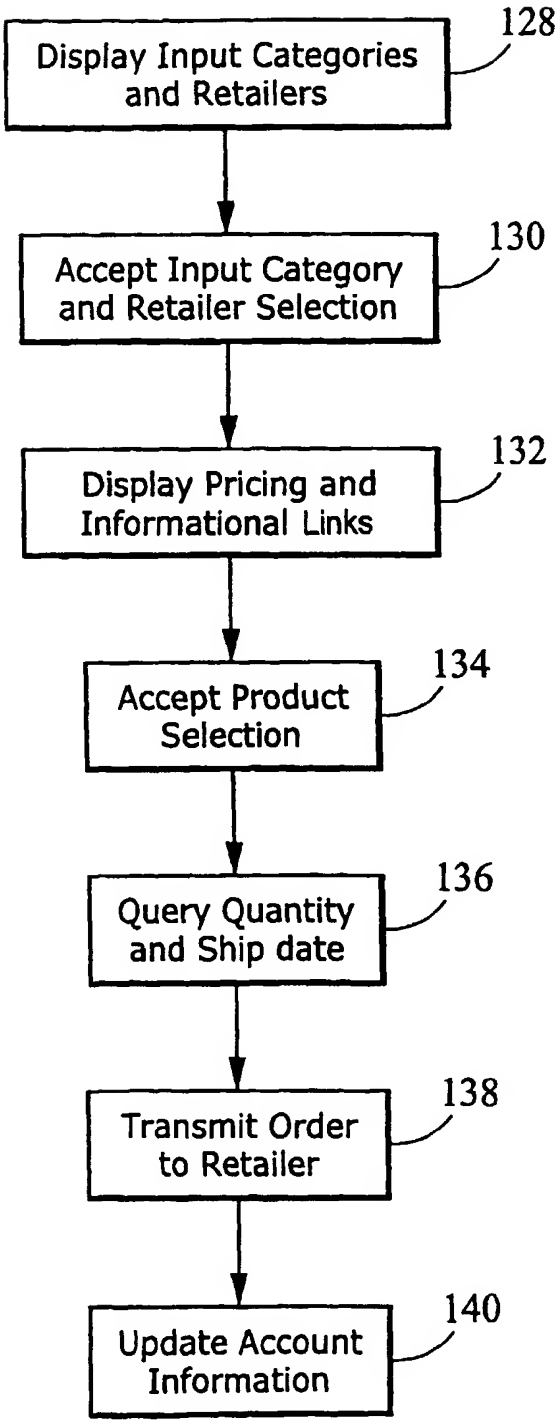

FIG. 6

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PATENT COOPERATION TREATY

PCT

DECLARATION OF NON-ESTABLISHMENT OF INTERNATIONAL SEARCH REPORT

(PCT Article 17(2)(a), Rules 13ter.1(c) and Rule 39)

Applicant's or agent's file reference	IMPORTANT DECLARATION	Date of mailing *(day/month/year)*
10436-035W01		11/06/2001
International application No.	International filing date *(day/month/year)*	(Earliest) Priority date *(day/month/year)*
PCT/US 00/42708	08/12/2000	08/12/1999
International Patent Classification (IPC) or both national classification and IPC	G06F17/60	
Applicant		
CARGILL, INCORPORATED et al.		

This International Searching Authority hereby declares, according to Article 17(2)(a), that **no international search report will be established** on the international application for the reasons indicated below

1. [X] The subject matter of the international application relates to:
   - a. [ ] scientific theories.
   - b. [ ] mathematical theories
   - c. [ ] plant varieties.
   - d. [ ] animal varieties.
   - e. [ ] essentially biological processes for the production of plants and animals, other than microbiological processes and the products of such processes.
   - f. [X] schemes, rules or methods of doing business.
   - g. [ ] schemes, rules or methods of performing purely mental acts.
   - h. [ ] schemes, rules or methods of playing games.
   - i. [ ] methods for treatment of the human body by surgery or therapy.
   - j. [ ] methods for treatment of the animal body by surgery or therapy.
   - k. [ ] diagnostic methods practised on the human or animal body.
   - l. [ ] mere presentations of information.
   - m. [ ] computer programs for which this International Searching Authority is not equipped to search prior art.

2. [ ] The failure of the following parts of the international application to comply with prescribed requirements prevents a meaningful search from being carried out:
   [ ] the description [ ] the claims [ ] the drawings

3. [ ] The failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions prevents a meaningful search from being carried out:
   [ ] the written form has not been furnished or does not comply with the standard.
   [ ] the computer readable form has not been furnished or does not comply with the standard.

4. Further comments:

Name and mailing address of the International Searching Authority	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Mar'a Rodr'guez Nõvoa

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FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 203

The subject-matter claimed in claims 1-14, 29 falls under the provisions of Article 17(2)(a)(i) and Rule 39.1(iii), PCT, such subject-matter relating to a method of doing business.

Claims 15-28, 30 relate to a conventional system (program product, computer readable medium) for performing the business method of claims 1-14, 29. Although these claims do not literally belong to the method category, they essentially claim protection for the same commercial effect as the method claims. The International Searching Authority considers that searching this subject-matter would serve no useful purpose. It is not at present apparent how the subject-matter of the present claims may be considered defensible in any subsequent examination phase in front of the EPO as International Preliminary Examining Authority with regard to the provisions of Article 33(1) PCT (novelty, inventive step); see also Guidelines B-VII, 1-6).

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.